

### AMENDMENTS TO THE DRAWINGS

Please amend Figs. 1-6 of the drawings in accordance with the three replacement sheets of drawings submitted herewith.

## REMARKS

This communication is submitted in response to the final Office Action dated April 19, 2006.

Claims 1-18 are pending in the subject patent application with claims 1, 4, 5, 14 and 16 have been amended to correct inadvertent typographical and grammatical errors. Claims 2, 4, 8, 9, 12-14, 16 and 18 stand allowed by the Examiner. Claim 7 stands withdrawn from consideration by the Examiner. Claims 19-31 were previously canceled. Claims 1, 3, 5, 6, 10, 11, 15 and 17 stand finally rejected as being unpatentable over Jensen et al alone or further in view of Pirhadi.

The drawings have been amended herewith in accordance with the Examiner's suggestion to designate Figs. 1-6 with the legend "prior art". It is respectfully requested that this drawing amendment be approved by the Examiner along with the amendments to the drawings previously submitted on April 19, 2006.

Reconsideration of the subject patent application is respectfully requested in view of the foregoing amendments and the following remarks.

The rejection of claims 1, 3, 5, 6, 10, 11, 15 and 17 as being unpatentable over Jensen et al alone or further in view of Pirhadi is respectfully traversed for the following reasons.

Independent claim 1 pertains to a clamp for installation on a feedwater sparger end bracket assembly having an attachment plate connected to an end plate of a feedwater sparger. In contrast, the clamp apparatus 36 of Jensen et al is designed for installation on an upper T-box 26 from which distribution header pipes 18 and 20 diverge. As explained further below, the clamp apparatus 36 disclosed by Jensen et al

performing in the manner asserted by the Examiner. In addition, the clamp apparatus 36 of Jensen et al actually requires a complex assembly of three separate clamps, i.e. first clamp assembly 38, second clamp assembly 40, and strong-back assembly 42, in order to operate as intended whereas the claimed invention comprises an individual clamp. As explained further below, it is improper to select random isolated features from the separate clamps of Jensen et al, as the Examiner seems to have done, in order to render the claimed invention obvious.

The clamp recited in claim 1 comprises a first clamp member, a second clamp member and a connector securing the first and second clamp members to one another in a closed position on a feedwater sparger end bracket assembly. The first clamp member is required to include a first internal compartment ... defined between a pair of first internal walls of the first clamp member ... spaced from one another by a distance to receive a first portion of the attachment plate and a first portion of the end plate together between the first internal walls with a close enough fit for the attachment plate and the end plate to be constrained against disconnecting from each other. The second clamp member is similarly required to include a second internal compartment ... defined between a pair of second internal walls of the second clamp member ... spaced from one another by a distance to receive a second portion of the attachment plate, opposite the first portion of the attachment plate, and a second portion of the end plate, opposite the first portion of the end plate, together between the second internal walls with a close enough fit for the attachment plate and the end plate to be constrained against disconnecting from each other. When secured in the closed position on the feedwater sparger end bracket assembly by the connector, the clamp recited in claim 1 is required to constrain the first portion of the attachment plate and the first portion of

the end plate between the first internal walls and to constrain the second portion of the attachment plate and the second portion of the end plate between the second internal walls. The features recited in claim 1 for the first and second clamp members and the closed position for the clamp are not disclosed or suggested by Jensen et al alone or in combination with of Pirhadi.

Although the Examiner professes “to demonstrate how the claimed features correspond to features of the cited art” (Office Action, page 4), the final rejection in fact fails to clearly identify the structure of Jensen et al the Examiner considers as corresponding to the recited features for the first clamp member, the second clamp member and the closed position for the clamp. The Examiner states that the clamp of Jensen et al comprises upper and lower members without identifying the structural components of Jensen et al the Examiner considers as corresponding to the upper and lower members (Office Action, pages 6-7). The Examiner maintains that the upper and lower members of the Jensen et al clamp are “configured with recesses, compartments, shoulders, etc.” (Office Action, page 7), but again fails to identify any structural features of Jensen et al corresponding to the recesses, compartments, shoulders, etc. The Examiner refers to Fig. 4 of Jensen et al as disclosing internal walls (Office Action, page 3) and compartments, each comprising a recess and shoulders (Office Action, page 7).

Other than making these broad conclusory statements, the Examiner fails to positively identify the structures in Fig. 4 of Jensen et al that are the internal walls, compartments, recesses and shoulders. In the absence of any positive identification, it cannot be determined where in Fig. 4 of Jensen et al the Examiner finds each clamp member 44A and 46A as having a pair of internal walls and a compartment as required by claim 1, much less a recess and shoulders which are not required by claim 1 but are recited in

other claims. The only clear correspondence made by the Examiner between the structure of Jensen et al and the claimed invention pertains to the correspondence made by the Examiner between the connecting member 48A of Jensen et al and the recited connector.

The vagueness and lack of certainty surrounding the factual basis for the Examiner's rejection require that applicants make various logical assumptions in pointing out the impropriety of the Examiner's rejection. The first clamp member and the second clamp member are each recited in the singular in claim 1 and, together with the Examiner's reference to Fig. 4 of Jensen et al which depicts the clamp assembly 38, supports the assumption that the Examiner considers the clamp assembly 38 as corresponding to the recited clamp. The clamp assembly 38 comprises upper clamp body 44A, lower clamp body 46A and bolt assembly 48A, which are assumed as corresponding respectively to the recited first clamp member, the second clamp member and the connector. Aside from the first and second clamp members each being recited in the singular in claim 1, the additional recitations in claim 1 concerning movement of the first and second clamp members toward and away from one another to obtain the closed position for the clamp as well as the features recited for the closed position of the clamp would make it illogical and would require a strained interpretation of Jensen et al to equate from a structural standpoint anything other than clamp assembly 38 (or essentially identical clamp assembly 40) with the claimed clamp. Although the Examiner's reliance on Fig. 4 of Jensen et al suggests the Examiner does view the clamp assembly 38 as corresponding to the claimed clamp, it appears the Examiner at the same time views the entire clamp apparatus 36, comprising clamp assemblies 38 and 40 and strong-back assembly 42, as corresponding to the claimed

clamp in order to find the claimed features that cannot be found in clamp assembly 38 alone. As discussed below, this requires a strained interpretation of Jensen et al and piecemeal combination of isolated structural features that is submitted to be improper.

In contrast to the first and second clamp members recited in claim 1, the upper and lower clamp bodies 44A and 46A of the clamp assembly 38 of Jensen et al do not each have an internal compartment defined between a pair of internal walls of the clamp body, much less a pair of internal walls spaced from one another by a distance to receive a portion of an attachment plate and a portion of an end plate together between the internal walls with a close enough fit for the attachment plate and end plate to be constrained against disconnecting from each other. As noted above, the Examiner refers to Fig. 4 of Jensen et al as disclosing the recited internal walls. However, Fig. 4 and the explicit teachings of Jensen et al clearly disclose the upper clamp body 44A to have one continuous curved side 54A and the lower clamp body 46A to have one continuous curved side 66A conforming to a single structural component, i.e. header pipe 18, as opposed to each clamp body having a pair of internal walls between which an internal compartment is defined and which are spaced from one another by a distance to receive multiple structural components, i.e. a portion of an attachment plate and a portion of an end plate, together between the pair of internal walls with a close enough fit to constrain the multiple structural components against disconnecting from each other. Neither curved side 54A nor curved side 66A can fairly be interpreted as a pair of internal walls between which an internal compartment is defined and between which a portion of an attachment plate and a portion of an end plate can be received together with a close enough fit for the attachment plate and the end plate to be constrained against disconnecting from each other. As noted above, other than the

broad conclusory statement that Fig. 4 of Jensen et al shows the clamp bodies 44A and 46A to have internal walls, the Examiner has failed to positively identify where in Fig. 4 each clamp body 44A and 46A can be seen as having a pair of internal walls between which an internal compartment is defined. Indeed, Jensen et al's disclosure and claims expressly limit the configuration of curved sides 54A and 66A to the single cylindrical pipe 18 and, furthermore, Jensen et al does not contemplate any arrangement for the clamp bodies 44A and 46A to receive two separate structural components together, much less to constrain two structural components against disconnecting from each other. As taught by Jensen et al, the clamp bodies 44A and 46A secured on pipe 18 do not and are not capable of constraining two separate structural components against disconnecting from each other as recited for the first and second clamp members of claim 1. Rather, the clamp assembly 38 serves merely to establish a connection with pipe 18 and must be coupled with clamp assembly 40 and strong-back assembly 42 in order to hold pipe 18 to upper T-box 26. Jensen et al thusly teaches away from modifying the clamp bodies 44A and 46A to either receive two structural components together, to clamp any type of plate component, or to constrain two structural components against disconnecting from each other.

The Examiner further concludes from Fig. 4 of Jensen et al that the clamp assembly 38 may provide a close enough fit for the attachment plate and the end plate of a feedwater sparger end bracket assembly to be constrained against disconnecting from each other in that the curvature of the clamp members 44A and 46A may be positioned to confine the attachment plate and end plate (Office Action, page 3). The Examiner's conclusion is submitted to be unfounded. The continuously curved sides 54A and 66A explicitly disclosed and claimed by Jensen et al for the clamp bodies 44A

and 46A are partially circular in curvature and are entirely unsuitable from a structural and practical standpoint to constrain the attachment plate and end plate of a feedwater sparger end bracket assembly against disconnecting from each other. Aside from the apparent structural inadequacies, Jensen et al fails to disclose or suggest the upper and lower clamp bodies 44A and 46A as having any capability whatsoever to constrain two separate plate components against disconnecting from each other and, as pointed out above, actually teaches away from this capability. No teachings or suggestions whatsoever are provided by Jensen et al for the upper and lower clamp bodies 44A and 46A to receive, much less constrain against disconnecting, two separate structural components. The structural arrangement disclosed by Jensen et al for securement of the clamp bodies 44A and 46A to one another also precludes the clamp bodies 44A and 46A from being capable of being positioned to confine an attachment plate and end plate together in that Jensen et al requires that the clamp bolt 124 extend entirely through the pipe 18 in order to secure the clamp bodies 44A and 46A to one another on pipe 18. This arrangement renders the clamp assembly 38 entirely unsuitable and inoperable to constrain an attachment plate and end plate as required for the closed position of the clamp recited in claim 1. In addressing the argument presented by applicants in the previous amendment filed February 7, 2006, that the clamp of Jensen et al cannot constrain the attachment plate and end plate together, the Examiner disposes of applicants' argument as constituting an unsupported statement that is not considered credible evidence that this is the case (Office Action, page 4). Yet, the Examiner proffers the entirely unsupported statement that "the curvature of the clamp member may be positioned to confine the attachment plate and end plate" and this unsupported statement cannot satisfy the burden required of the Examiner to adduce



the evidence necessary to establish a prima facie case of obviousness.

In addition to the aforementioned deficiencies, the upper and lower clamp bodies 44A and 46A of Jensen et al, when secured in a closed position on pipe 18 by bolt assembly 48A, do not have the features set forth in claim 1 for the closed position for the recited clamp. As pointed out above, the clamp assembly 38 secured on pipe 18 does not constrain any two structural components together much less each of the clamp bodies 44A and 46A constraining an attachment plate and an end plate between a pair of internal walls of the clamp body.

Most of the Examiner's arguments in support of the obviousness rejection focus on explaining why it would have been obvious to adapt the inner surfaces of the Jensen et al clamp to more extensively circumscribe the restrained object and, in particular, to enclose an angular feedwater sparger end bracket assembly (Office Action, pages 3-4 and 8). The Examiner cites Pirhadi as an example of a clamp with conforming inner surfaces to support the prior common knowledge finding that it is obvious to adapt the inner contours of a clamp to conform to the shape of a clamped object (Office Action, pages 3-4 and 7). Firstly, for the reasons explained above, it would not have been obvious to adapt the curved sides of the Jensen et al clamp to constrain the attachment plate and end plate of a feedwater sparger end bracket assembly against disconnecting from each other, and Jensen et al actually teaches away from such an adaptation. Secondly, the Examiner's reliance on Pirhadi is clearly mistaken because it does not support the proposition for which it is relied on. The whole purpose of Pirhadi is for the clamp surfaces not to touch or conform to the cylindrical tube 1 being clamped, except in very limited areas (Pirhadi, column 3, lines 3-5 and 51-54), and Pirhadi requires clamping blocks inserted between the clamp members to establish the limited clamping

engagement. Pirhadi seeks to avoid any notable clamping force on the tube in order to avoid causing deformation of the tube (Pirhadi, column 1, lines 23-28 and 65-67). In order to avoid a similar problem in the pipe 28 of Jensen et al, Pirhadi in fact would motivate one to adapt the clamp bodies 44A and 46A of Jensen et al so as not to conform to the shape of the pipe 18 or other object being clamped - the exact opposite of the adaptation asserted by the Examiner to be made obvious by Pirhadi.

It is fundamental that rejections under 35 USC §103 must be based on evidence. In re Grasselli, 713 F. 2d 731, 218 USPQ 969 (Fed. Cir. 1983), and the Examiner has the burden under Section 103 of providing the evidence necessary to establish a prima facie case of obviousness. In re Piasecki, 745 F. 2d 1468, 223 USPQ 785 (Fed. Cir. 1984). Establishment of the prima facie case of obviousness requires proof of structural similarity. Id. As pointed out above, the Examiner has failed to adduce any factual evidence demonstrating a structural correspondence between the upper and lower clamp bodies of Jensen et al and the limitations recited in claim 1 for the first and second clamp members and for the closed position of the clamp. The only support provided by the Examiner for the obviousness rejection are broad conclusory statements and vague, indeterminable references to Jensen et al which fail to provide the level of factual evidence needed to support an obviousness rejection. The Examiner's rejection can only be based on piecing together isolated teachings of Jensen et al using the claimed invention as a template to render the claimed invention obvious, while ignoring the teachings of Jensen et al that would lead one away from the claimed invention, and this is impermissible. Ex parte Haymond, 41 USPQ 2d 1217 (Bd. of Pat. Appls. and Int. 1996). The Examiner has made a strained interpretation of the references which could only be made through hindsight, and the Pirhadi patent

does not even teach what the Examiner relies upon it as supposedly teaching.

Furthermore, the prior art relied on by the Examiner does not make it obvious to modify Jensen et al to obtain the claimed invention since neither Jensen et al nor Pirhadi provide any motivation for modifying the upper and lower clamp bodies of Jensen et al in the manner asserted by the Examiner, and any such motivation can only come from applicants' invention. Neither Jensen et al nor Pirhadi even deal with the situation where first and second clamp members, secured by a connector, operate to constrain two separate structural components from disconnecting from one another. Modifying Jensen et al in the manner suggested by the Examiner can only be considered obvious if the prior art suggested the desirability of the modification. In re Fritch, 23 USPQ 2d 1780 (Fed. Cir. 1992). As pointed out above, Pirhadi is cited by the Examiner as suggesting the desirability of modifying Jensen et al when in actuality Pirhadi teaches the undesirability of the suggested modification. In light of the foregoing, the rejection of independent claim 1 as being unpatentable over Jensen et al alone or further in view of Pirhadi is considered improper and insufficient as a matter of law. Independent claim 1 is thusly submitted to be clearly patentable over Jensen et al alone or further in view of Pirhadi and should be allowed along with its dependent claims 3, 5, 6 and 7.

Dependent claim 5 requires each of the first and second clamp members to have parallel inner and outer shoulders transverse to the pair of internal walls and requires the clamp in the closed position to constrain the feedwater sparger end bracket assembly between the inner and outer shoulders. Claim 6 depends from claim 5 and requires each of the first and second clamp members to have a surface transverse to the inner and outer shoulders, requires the transverse surfaces to be disposed in opposition, and requires the clamp in the closed position to constrain the feedwater

sparger end bracket assembly between the transverse surfaces. As pointed out above, the Examiner merely engages in broad conclusory statements that the upper and lower members of Jensen et al are configured with recesses, compartments, shoulders, etc. without identifying where these specific features are found in the upper and lower members of Jensen et al. At best, the upper and lower clamp bodies 44A and 46A of Jensen et al can be considered as having respective shoulders, i.e. flanges 56A and 68A, as opposed to each clamp body having parallel inner and outer shoulders that are transverse to a pair of internal walls of the clamp body, which internal walls the clamp bodies of Jensen et al do not have as pointed out above. Since each upper and lower clamp body 44A and 46A does not have inner and outer shoulders, it follows that the clamp assembly 38 of Jensen et al in the closed position does not and cannot constrain any structural component between inner and outer shoulders of each clamp body. Even if the flanges 56A and 68A are viewed as corresponding to the claimed shoulders, only one shoulder is provided on each clamp body and does not endow the clamp body with the capability to constrain the attachment plate and end plate of a feedwater sparger end bracket assembly. The additional features of transverse surfaces recited in claim 6 are also not found in the upper and lower clamp bodies of Jensen et al. None of the features recited in claims 5 and 6 are alleged by the Examiner to be found in Pirhadi. Accordingly, dependent claims 5 and 6 are submitted to be clearly patentable over Jensen et al alone or further in view of Pirhadi for the additional structural limitations recited therein as well as being allowable with independent claim 1.

Claim 7 was withdrawn from consideration by the Examiner but should be allowable with independent claim 1.

Independent claim 10 requires an upper clamp member having a lower surface,

an internal compartment open along the lower surface, an inner shoulder protruding downwardly from the lower surface and an outer shoulder protruding downwardly from the lower surface, the compartment being defined between spaced internal walls, and the inner shoulder being parallel to the outer shoulder. Claim 10 further recites a lower clamp member having the same structural features as the upper clamp member and recites a connector connecting the upper and lower clamp members in a closed position with the inner shoulders of the clamp members aligned, with the outer shoulders of the clamp members aligned, and with the sparger/bracket junction constrained between the internal walls of the upper clamp member, between the internal walls of the lower clamp member, between the inner and outer shoulders of the upper clamp member, between the inner and outer shoulders of the lower clamp member and between a lower surface of the upper clamp member and an upper surface of the lower clamp member. As pointed out above in connection with independent claim 1, Jensen et al does not disclose or make obvious a compartment defined between spaced internal walls and, as pointed out above in connection with dependent claims 5 and 6, Jensen et al does not disclose or make obvious inner and outer parallel shoulders on each clamp member. Even if the flanges 56A and 68A are viewed as corresponding to the recited shoulders, only one shoulder is provided on each clamp body 44A, and 46A and the shoulder 56A does not protrude downwardly from a lower surface of the clamp body 44A while the shoulder 68A does not protrude upwardly from an upper surface of the clamp body 46A. In addition, the singular shoulders or flanges 56A and 68A of the respective clamp bodies 44A and 46A do not impart each clamp body with the capability to constrain a sparger/bracket junction between inner and outer shoulders of the clamp body in addition to constraining the

sparger/bracket junction between a lower surface of the upper clamp body and an upper surface of the lower clamp body. Pirhadi does not rectify any of the foregoing deficiencies of Jensen et al and is not alleged by the Examiner to disclose any of the aforementioned features of claim 10. Accordingly, independent claim 10 is submitted to be clearly patentable over Jensen et al alone and further in view of Pirhadi and should be allowable along with dependent claim 11.

Dependent claim 11 recites additional limitations pertaining to the inner and outer shoulders of the clamp members, none of which are disclosed or made obvious by Jensen et al alone or further in view of Pirhadi. Claim 11 is thusly submitted to be clearly patentable over Jensen et al alone or further in view of Pirhadi for the additional limitations recited therein as well as being allowable with independent claim 10.

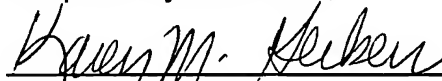
Independent claim 15 recites the inner and outer shoulders and the internal walls of the upper and lower clamp members in terms of means for performing a particular function, and it is maintained that the Examiner's disregard of the recited function is improper. However, even disregarding the functional limitations recited in claim 15, Jensen et al fails to disclose or make obvious the recited structure for the reasons previously discussed above. Accordingly, independent claim 15 is submitted to be clearly patentable over Jensen et al alone or further in view of Pirhadi and should be allowed along with its dependent claim 17.

Claim 17 recites recessed surfaces on the upper and lower clamp members and, other than a broad conclusory statement by the Examiner that Jensen et al discloses recesses, no evidence has been adduced by the Examiner showing where the recessed surfaces are found in the upper and lower clamp bodies 44A and 46A of Jensen et al. Since no recessed surfaces are found in the upper and lower clamp

bodies 44A and 46A of Jensen et al, or made obvious by the prior art, claim 17 is submitted to be clearly patentable over Jensen et al alone or further in view of Pirhadi for the additional limitations recited therein as well as being allowable with independent claim 15.

In light of the foregoing, all of the claims in the subject patent application are submitted to be in condition for allowance. Action in conformance therewith is courteously solicited. If any issues in the subject application remain unresolved, the Examiner is encouraged to contact the undersigned attorney.

Respectfully submitted,

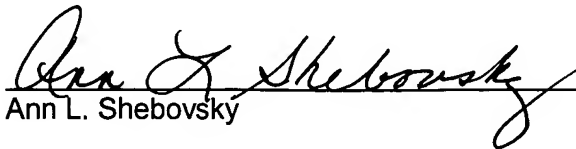


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